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Amendments to the Claims

A complete listing of the claims follows. Please amend claims 1–3, 6, 10–13 as indicated below and cancel claims 4, 5, 7 – 9 and 14 – 20.

1. (Currently amended) An encoder for compressing image information comprising:
 - a memory configured to store a sequence of characters representing an image; and
 - a processor configured to: ~~determine if the stored sequence of characters corresponds to one of a banded image and a page image, to operate in a first mode to encode the stored sequence of characters if the sequence of characters is determined to correspond to the banded image, and to operate in a second mode, different than the first mode, to encode the stored sequence of characters if the stored sequence of characters is determined to correspond to the page image.~~
 - (i) determine if the stored sequence of characters corresponds to one of a banded image and a page image;
 - (ii) operate in a first mode to encode the stored sequence of characters if the sequence of characters is determined to correspond to the banded image, and to operate in a second mode, different than the first mode, to encode the stored sequence of characters if the stored sequence of characters is determined to correspond to the page image; and
while operating in the second mode:
 - (i) determining if the stored sequence of characters corresponds to a template image, the template image comprising one of a primarily black image and a primarily white image;
 - (ii) encoding the stored sequence of characters in accordance with a first compression technique if the stored sequence of characters does not correspond to a template image; and

- (iii) encoding the stored sequence of characters in accordance with a second compression technique if the processor determines that the stored sequence of characters corresponds to a template image.
2. (Currently amended) An encoder according to claim 1, wherein the processor is further configured to encode the stored sequence of characters in accordance with a pack-bit compression technique in the first mode of operation and in accordance with a LZW compression technique as the first compression technique in the second mode of operation.
3. (Currently amended) An encoder according to claim 2, wherein the processor is further configured to encode the stored sequence of characters in accordance with a pack-bit compression technique as the second compression technique in the second mode of operation.
4. (Canceled)
5. (Canceled)
6. (Currently amended) A method for compressing image information comprising:
- receiving image data representing an image;
 - determining if the received image data corresponds to one of banded image data and page image data;
 - encoding the received image data in accordance with a first encoding technique; if the received image data is determined to correspond to the banded image data; and
 - encoding the received image data in accordance with a second encoding technique, ~~different than the first encoding technique~~, if the received image data is determined to correspond to the page image data wherein

- (i) the second encoding technique is the same encoding technique as the first encoding technique if the received image data is further determined to correspond to a template image and
- (ii) the second encoding technique is a different encoding technique from the first encoding technique if the received image data is further determined not to correspond to a template image.

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Currently amended) A method according to claim ~~[[9]]~~6, wherein the first encoding technique is a pack-bit technique and the second encoding technique is an LZW technique.

11. (Currently amended) An imaging system comprising:

a raster image processor configured to determine if a sequence of characters corresponds to one of a banded image and a page image, to operate in a first mode to encode the sequence of characters if the sequence of characters is determined to correspond to the banded image, and to operate in a second mode, different than the first mode, to encode the sequence of characters if the sequence of characters is determined to correspond to the page image and further configured, in the second mode, to determine if the sequence of characters corresponds to a template image; and

an imager controller configured to receive the encoded sequence of characters, and to operate in a first mode to decode the received encoded sequence of characters into the sequence of characters if the encoded sequence of characters is determined to correspond to the banded image, and to operate in a second mode to decode the received encoded sequence of characters into the sequence of characters if the encoded sequence of characters is

determined to correspond to the page image and further configured, in the second mode, to determine if the sequence of characters corresponds to a template image.

12. (Currently amended) A system according to claim 11, wherein the raster image processor is further configured to encode the sequence of characters in accordance with a pack-bit compression technique in the first mode of operation and in accordance with a LZW compression technique in the second mode of operation if the encoded sequence of characters is determined not to be a template image.

13. (Currently amended) A system according to claim 12, wherein the raster image processor is further configured to encode the sequence of characters in accordance with a pack-bit compression technique in the second mode of operation if the encoded sequence of characters is determined to be a template image.

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

RESPONSE

The Applicant respectfully thanks the Examiner for speaking with the Applicant's attorney by telephone on June 17, 2004, during which conversation the rejections and the references of record were discussed.

In the Office Action dated April 9, 2004, the Examiner objected to the substitute specification, stating that the specification added new matter. The Applicant has amended the specification so as to clarify the objected-to matter, and respectfully requests the Examiner accept the substitute specification filed herewith. No new matter has been added. The Examiner is invited to contact the Applicant's attorney if any further revisions to the specification or drawings are required.

The Office Action also rejected claims 1-4 and 6-20. The Applicant has amended the independent claims, with each amendment being supported by the original specification. The Applicant respectfully submits that the amended claims are patentable over the cited references.

Claims Status

Claims 1-4, and 6-20 were pending in the Application. Claims 1-4 and 6-20 stand rejected. Claims 1-3, 6, 10-13 are amended by the present Amendment. Claims 4, 5, 7-9, and 14-20 are canceled by the present Amendment. Support for the amendments may be found throughout the specification. Upon entry of the present Amendment and Response After Final, claims 1-3, 6, and 10-13 will be pending and are presented for reconsideration.

Rejections Under 35 U.S.C. § 112

All claims rejected under 35 U.S.C. § 112 first and second paragraphs have been canceled. The Applicant respectfully submits that the amendments to the remaining claims should address the Examiner's prior rejections regarding the use of "primarily black and primarily white" as well as clarification of the claimed determination and response if the image is a template image.

Rejections Under 35 U.S.C. §103

Claims 1, 6, and 11 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,009,242 to Anzai (“Anzai”) in view of U.S. Patent No. 5,535,311 to Zimmerman (“Zimmerman”). Claims 2, 3, 7–8, 12–13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Anzai in view of Zimmerman and further in view of U.S. Patent No. 6,181,435 to Onondera (“Onondera”). Claims 4, 9, 14, 16, and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Anzai in view of Zimmerman and further in view of U.S. Patent No. 6,038,340 to Ancin et al. (“Ancin”). Claims 10, 15, 19, and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Anzai in view of Zimmerman and further in view of Onondera and Ancin.

Independent Claim 1

Amended independent claim 1 recites, in part, “while operating in a second mode: determining if the stored sequence of characters corresponds to a template image, the template image comprising one of a primarily black image and a primarily white image” and (still during the second mode of operation) “encoding the stored sequence of characters in accordance with a first compression technique if the stored sequence of characters does not correspond to a template image; and encoding the stored sequence of characters in accordance with a second compression technique if the processor determines that the stored sequence of characters corresponds to a template image.”

Neither Anzai nor Zimmerman, alone or in combination, teach or suggest “determining if the stored sequence of characters corresponds to a template image,” or “encoding the stored sequence of characters in accordance with a first compression technique if the stored sequence of characters does correspond to a template image and encoding the stored sequence of characters in accordance with a second compression technique if the processor determines that the stored sequence of characters corresponds to a template image,” as recited in independent claim 1.

Anzai does not teach or suggest operating in distinct modes to encode a sequence of characters corresponding to a template image. Instead, and as the Office Action dated November 4, 2003 acknowledges, Anzai does not have two encoding modes of operation.

(Office Action 11/04/2003, page 9; para. 16.). Anzai uses the same compression technique regardless of whether the data is a banded image or a page image. Additionally, Anzai makes no mention of template images or methods of determining if a page image is a template image as is recited in independent claim 1.

Zimmerman fails to remedy the deficiencies of Anzai because Zimmerman does not teach or suggest determining whether a sequence of characters corresponds to a banded image or a page image, nor does it teach or suggest determining if a page image is or is not a template image. Rather, Zimmerman's clustering approach averages the number of image data transitions. The Zimmerman transition array does not explicitly, and may not necessarily, correspond to a banded image or a page image, and consequently does not correspond to a template image. While Zimmerman may use some specific compression schemes and image classifications, Zimmerman does not teach or suggest this compression scheme or this classification. Moreover, Zimmerman has only one level of image classification while Applicant has a two-level classification system.

Therefore, in light of the current amendment, and because neither Anzai nor Zimmerman teach or suggest, alone or in combination, an encoder operating in two modes, banded or paged, and further configured in page mode to determine if the image is a template image, claim 1 is patentable in light of the aforementioned patents. Dependent claims 2 and 3 are patentable because they depend on a patentable base claim. These claims may also include other features not taught or suggested by the cited references.

Independent Claim 6

Independent claim 6 recites, in part, "determining if the received image data corresponds to one of banded image data and page image data; encoding the received image data in accordance with a first encoding technique if the received image data is determined to correspond to the banded image data; and encoding the received image data in accordance with a second encoding technique if the received image data is determined to correspond to the page image data wherein the second encoding technique is the same encoding technique as the first encoding technique if the received image data

is further determined to correspond to a template image and the second encoding technique is a different encoding technique from the first encoding technique if the received image data is further determined not to correspond to a template image.”

As described above, neither Anzai nor Zimmerman, alone or in combination, teach or suggest distinguishing between banded image data and page image data and then further determining if a page image is a template image.

Onondera also fails to remedy the deficiencies of Anzai and Zimmerman because Onondera does not teach or suggest determining whether a sequence of characters corresponds to a banded image or a page image. As stated in the previous Response, Onondera always converts image data into coded band data. Because Onondera does not teach determining if the image is banded or page data, it cannot not teach the further determination in page mode if the image is a template image. Therefore, Onondera does not teach or suggest the elements of claim 6 and consequently fails to cure the deficiencies of Anzai and Zimmerman.

Ancin also fails to remedy the deficiencies of Anzai and Zimmerman. In particular, Ancin teaches a system and method for “automatically detecting image black and white points for a digital image.” (Col. 1, lines 55–57). Ancin does not, however, teach or suggest distinguishing between a banded image and a page image or any type of compression techniques, nor the further determination if the image is a template image. Thus, Ancin does not teach or suggest the elements of claim 6 and consequently fails to cure the deficiencies of Anzai and Zimmerman.

Accordingly, the references cited by the Examiner, alone or in combination, fail to teach or suggest the recited elements of independent claim 6. Dependent claim 10 is patentable because it depends on a patentable base claim. Claims 6 and 10 may also include other features not taught or suggested by the cited references. The Applicant therefore respectfully submits that the subject matter of independent claim 6, and the claims that depend therefrom, i.e., claim 10, does not fall within the disclosures of Anzai, Zimmerman, Onondera, and/or Ancin, either alone or in combination.

Independent Claim 11

Independent claim 11 recites, in part, “a raster image processor configured to determine if a sequence of characters corresponds to one of a banded image and a page image, to operate in a first mode to encode the sequence of characters if the sequence of characters is determined to correspond to the banded image, and to operate in a second mode, different than the first mode, to encode the sequence of characters if the sequence of characters is determined to correspond to the page image and further configured, in the second mode, to determine if the sequence of characters corresponds to a template image.”

As described above, Anzai, Zimmerman, Onondera, and Ancin fail to teach or suggest distinguishing between banded image data and page image data, much less the further determination during page mode if the image is or is not a template image. The Applicant therefore respectfully submits that the subject matter of independent claim 11, and the claims that depend therefrom, i.e., 12 and 13, do not fall within the disclosures of Anzai, Zimmerman, Onondera, and/or Ancin, either alone or in combination.


CONCLUSION

The Applicant respectfully requests that the Examiner reconsider the application and claims in light of the foregoing Amendment and Response After Final, and respectfully submit that the claims are in condition for allowance. If, in the Examiner's opinion, a telephonic interview would expedite the favorable prosecution of the present application, the undersigned attorney would welcome the opportunity to discuss any outstanding issues, and to work with the Examiner toward placing the application in condition for allowance.

Respectfully submitted,

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